

CLAIMS

What is claimed is:

1. A card comprising:
a substrate including a first side having a plurality of conductors, having a second side having a plurality of contacts connected to at least one conductor of the plurality of conductors on the first side, at least one encapsulated semiconductor component on the first side, a molded peripheral portion laterally outwardly forming a periphery of the substrate, and at least one exposed connecting segment exposed at one of the periphery of the substrate and an intermediate region of the periphery of the substrate.
2. The card of claim 1, further comprising a notch in the periphery of the substrate to recess a portion of the exposed at least one connecting segment to a nonprotruding position.
3. The card of claim 1, wherein a portion of the encapsulated semiconductor component abuts a portion of the molded peripheral portion along an interface thereof.
4. The card of claim 3, wherein an abutting portion of the molded peripheral portion is coplanar with the portion of the encapsulated semiconductor component.
5. The card of claim 1, wherein the encapsulation material of the encapsulated semiconductor component and the molding material of the molded peripheral portion comprise epoxy resin.
6. The card of claim 1, wherein the substrate comprises a reinforced organic polymer resin.
7. The card of claim 1, wherein the second side of the substrate is substantially exposed.

8. The card of claim 1, wherein the at least one semiconductor component comprises a memory component.

9. The card of claim 1, wherein the card comprises a memory card for digitally recording and retrievably storing photographic data in a digital camera.

10. A card comprising:
a printed circuit substrate including a first side having a plurality of conductors, having a second side having a plurality of contacts connected to at least one conductor of the plurality of conductors on the first side, at least one encapsulated semiconductor component on the first side, a molded peripheral portion laterally outwardly forming a periphery of the substrate, and at least one exposed connecting segment exposed at one of the periphery of the substrate and an intermediate region of the periphery of the substrate.

11. The card of claim 10, further comprising a notch in the periphery of the printed circuit substrate to recess a portion of the exposed at least one connecting segment to a nonprotruding position.

12. The card of claim 10, wherein a portion of the encapsulated semiconductor component abuts a portion of the molded peripheral portion along an interface thereof.

13. The card of claim 10, wherein an abutting portion of the molded peripheral portion is substantially coplanar with the portion of the encapsulated semiconductor component.

14. The card of claim 10, wherein the printed circuit substrate comprises a reinforced organic polymer resin.

15. The card of claim 10, wherein the second side of the printed circuit substrate is substantially exposed.

16. The card of claim 10, wherein the at least one semiconductor component comprises a memory component.

17. The card of claim 10, wherein the printed circuit card comprises a memory card for digitally recording and retrievably storing photographic data in a digital camera.

18. A method for fabricating a card having a substrate having a circuit side and a back side, said substrate generally separated from a surrounding frame by a peripheral opening spanned by at least one connecting segment between said substrate and said frame, said substrate having at least one electrical circuit and at least one connector for communicating between said at least one electrical circuit and an external circuit, comprising:
clamping said substrate and said frame between a first plate and a second plate of a first molding assembly forming a first mold cavity for injecting a first material into said first mold cavity for molding a first plastic casting onto said circuit side of said substrate and encapsulating said at least one electrical circuit while leaving a peripheral portion of said circuit side free of said first material, said first plastic casting having an exposed surface and clamping said frame, substrate and first plastic casting between a first plate and a second plate of a second molding assembly, at least a portion of said exposed surface of said first plastic casting compressed for sealingly engaging a portion of said back side of said substrate against said first plate of said second molding assembly, said first plate and said second plate of said second molding assembly forming a second mold cavity for injecting a second material into said second mold cavity for molding a second plastic casting surrounding said first plastic casting and enclosing the peripheral portion of circuit side and an edge of said substrate, second plastic casting having a peripheral outer edge; and
singulating said substrate from said frame.

19. A method of claim 18, wherein said second molding assembly leaves said back side of said substrate substantially free of said second material.

20. A method of claim 18, further comprising:
applying antifiash material to said back side of said substrate prior to clamping in said second molding assembly.

21. A method of claim 20, wherein said antifiash material comprises a film.

22. A method of claim 18, wherein said substrate has peripheral edges thereabout, and said at least one connecting segment comprises at least one connecting segment on each of two opposed peripheral edges of said substrate.

23. A method of claim 18, wherein said at least one electrical circuit includes at least one semiconductor component mounted on said circuit side.

24. A method of claim 18, wherein said first plastic casting and said second plastic casting each comprise an epoxy resin.

25. A method of claim 18, wherein said first material and said second material each comprise a different resin.

26. A method of claim 18, wherein said substrate comprises a reinforced organic polymer resin.

27. A method of claim 18, further comprising:
subjecting said first plastic casting to a curing step prior to clamping in said second molding assembly.

28. A method of claim 18, further comprising:
subjecting said second plastic casting to a curing step after removal from said second molding assembly.

29. A method of claim 18, wherein said first molding apparatus and said second molding apparatus each comprise transfer molds.

30. A method of claim 18, wherein said at least one connector is mounted on said back side of said substrate.

31. A method of claim 18, wherein said second molding apparatus is configured to form said second plastic casting having an inner peripheral portion contiguous with said exposed surface of said first plastic casting, and an outer peripheral portion displaced from said exposed surface for attachment of a label covering an interface between said first plastic casting and said second plastic casting.

32. A method of claim 18, comprising:
forming a notch in said second plastic casting during said molding thereof configured to enclose an exposed end of a connecting segment following singulation thereof.

33. A method of claim 32, wherein said molding of said second plastic casting is performed by placing a pin in contact with said at least one connecting segment to form the notch.

34. A method of claim 32, wherein said singulation comprises cutting said connecting segment within said notch.

35. A method of claim 34, wherein said singulation comprises cutting said connecting segment with a cutter die.

36. A method of claim 18, wherein said second plastic casting is formed by compressing said frame and said substrate in said second molding apparatus with said first plastic casting compressed for sealingly depressing said substrate to a displaced position relative to said frame.

37. A method of claim 36, wherein said second mold cavity provides for molding of laterally extending wings from a central portion of said peripheral outer edge of said second plastic casting, said wings extending outwardly beyond said peripheral outer edge.

38. A method of claim 36, wherein said displaced position provides encapsulation of said at least one connecting segment within said second plastic casting.

39. A method of claim 37, wherein said singulation comprises cutting said wings and said at least one connecting segment from said second plastic casting along said peripheral outer edge thereof.

40. A method of claim 39, wherein said wings and said at least one connecting segment are cut from said second plastic casting with a saw.

41. A method of claim 39, wherein said wings and said at least one connecting segment are cut from said second plastic casting by stamping with a cutter die.

42. A method of claim 18, further comprising:
removing extraneous hardened plastic attached to said first plastic casting.

43. A method of claim 18, further comprising:
removing extraneous hardened plastic attached to said second plastic casting.

44. A method for fabricating a semiconductor card having a substrate having at least one circuit formed thereon and at least one connector from a plurality of spaced-apart substrates in strip form, said strip having a plurality of peripheral openings defining said substrates and a plurality of connecting segments attaching said substrates to said strip, said method comprising:
mounting a card circuit on each substrate of said plurality of spaced-apart substrates, each card circuit comprising at least one semiconductor component and apparatus for communication between each said card circuit and an external circuit;
molding first plastic castings to said substrates using a first molding assembly comprising a plurality of mold cavities for forming a first plastic casting over each circuit while leaving a peripheral portion of each substrate uncovered and molding second plastic castings encapsulating said peripheral portions of said substrates;
removing said strip from said second molding assembly; and
severing said connecting segments to singulate individual semiconductor cards from said strip.

45. A method of claim 44, wherein each of said substrates has first and second planar sides, said card circuit mounted on said first side and including conductors connected to said communication apparatus mounted on said second side.

46. A method of claim 44, wherein said communication means comprises conductive contacts.

47. A method of claim 45, wherein said first plastic casting is configured to be compressed by a first mold plate to force said second side of each substrate against a second mold plate during molding of said second plastic casting.

48. A method of fabricating a card having a circuit side and a back side, said substrate generally separated from a surrounding frame by a peripheral opening spanned by at least one connecting segment between said substrate and said frame, said substrate having an electrical circuit and at least one external connector for communicating between said electrical circuit and an external circuit, said method comprising:

placing said substrate and frame in a first molding assembly for injecting a first material into a first mold cavity formed by first and second plates to mold a first plastic casting onto said circuit side of said substrate and to encapsulate said electrical circuit while leaving a peripheral portion of said circuit side uncovered, said first plastic casting having an exposed surface;

removing said frame, substrate and first plastic casting from said first molding assembly;

placing said frame, substrate and first plastic casting between first and second plates of a second molding assembly, said exposed surface of said first plastic casting compressed for sealingly engaging said back side of said substrate against one of said first plate and said second plate of said second molding assembly for injecting a second material into a second mold cavity of said second molding assembly to mold a second plastic casting surrounding said first plastic casting and enclosing said uncovered peripheral portion and an edge of said substrate, said second plastic casting having a peripheral outer edge; and removing said frame, substrate and first and second plastic castings from said second molding assembly.

49. A method of claim 48, further comprising:
singulating said substrate with attached first and second plastic castings from said frame.

50. A method of claim 48, wherein said molding leaves said back side of said substrate substantially uncovered.

51. A method of claim 48, further comprising the step of applying antiflash material to said back side of said substrate prior to clamping in said second molding assembly.

52. A method of claim 51, wherein said antiflash material comprises a film.
53. A method of claim 48, wherein said substrate has peripheral edges thereabout, and said at least one connecting segment comprises at least one connecting segment on each of two opposed peripheral edges of said substrate.
54. A method of claim 48, wherein said electrical circuit includes at least one semiconductor component mounted on said circuit side of said substrate.
55. A method of claim 48, wherein said first and second plastic castings comprise epoxy resins.
56. A method of claim 48, wherein said first material and said second material comprise different resins.
57. A method of claim 48, wherein said substrate comprises a reinforced organic polymer resin.
58. A method of claim 48, further comprising subjecting said first plastic casting to a curing step prior to clamping in said second molding assembly.
59. A method of claim 48, further comprising subjecting said second plastic casting to a curing process after removal from said second molding assembly.
60. A method of claim 48, wherein said first molding assembly and said second molding assembly each comprise transfer molds.

61. A method of claim 48, wherein said at least one external connector is mounted on said back side of said substrate.

62. A method of claim 48, wherein said second molding assembly is configured to form said second plastic casting with an inner peripheral portion contiguous with said exposed surface of said first plastic casting and an outer peripheral portion displaced from said exposed surface for attachment of a label covering an interface between said first plastic casting and said second plastic casting.

63. A method of claim 48, further comprising:
forming a notch in said second plastic casting during said molding thereof configured to enclose an exposed end of a connecting segment following singulation.

64. A method of claim 63, wherein said molding of said second plastic casting is performed by placing a pin in contact with said connecting segment to form said notch.

65. A method of claim 63, wherein said singulation comprises cutting said connecting segment within said notch.

66. A method of claim 49, wherein said singulation comprises cutting said at least one connecting segment with a cutter die.

67. A method of claim 48, wherein said second plastic casting is formed by compressing said frame, substrate and first plastic casting in said second molding apparatus with said second mold cavity wherein said first plastic casting is compressed for sealingly depressing said substrate to a displaced position relative to said frame.

68. A method of claim 67, wherein said mold cavity of said second molding apparatus provides for molding of laterally extending wings from a central portion of said peripheral outer edge of said second plastic casting, said wings extending outwardly beyond said peripheral outer edge.

69. A method of claim 68, wherein said displaced position provides encapsulation of said at least one connecting segment within said second plastic casting.

70. A method of claim 65, wherein said singulation comprises cutting said wings and said at least one connecting segment from said second plastic casting along said peripheral outer edge thereof.

71. A method of claim 70, wherein said wings and said at least one connecting segment are cut from said second plastic casting with a saw.

72. A method of claim 68, wherein said wings and said at least one connecting segment are cut from said second plastic casting by stamping with a cutter die.

73. A method of claim 48, further comprising removing extraneous hardened plastic attached to said first plastic casting before said molding of said second plastic casting.

74. A method of claim 48 further comprising removing extraneous hardened plastic attached to said second plastic casting following said molding thereof.

75. A method for fabricating a card comprising:
providing a substrate having a circuit side and a back side, said substrate having a first portion thereof having a peripheral edge separated from a second portion of said substrate by a peripheral opening spanned by at least one connecting segment between said first portion of said substrate and said second portion of said substrate;

placing said substrate between a first plate and a second plate of a first molding assembly, said first plate and said second plate forming a first mold cavity for injecting a first material into said first mold cavity for molding a first plastic casting onto at least a portion of said circuit side of the substrate and leaving a peripheral portion of said circuit side free of said first material, said first plastic casting having an exposed surface; and placing said second portion of said substrate and said first plastic casting between a first plate and a second plate of a second molding assembly with at least a portion of said back side of said substrate engaging a portion of said first plate of said second molding assembly, said first plate and said second plate of said second molding assembly forming a second mold cavity for injecting a second material into said second mold cavity for molding a second plastic casting surrounding said first plastic casting and enclosing said peripheral edge of said first portion of said substrate, said second plastic casting having a peripheral outer edge.

76. The method of claim 75, further comprising:
removing said frame and substrate from said second molding assembly; and
singulating said substrate from said frame.

77. A method of claim 75, wherein said molding of said second plastic casting leaves said back side of said substrate substantially free of said second material.

78. A method of claim 75, further comprising:
applying antifiash material to said back side of said substrate prior to clamping in said second molding assembly.

79. A method of claim 78, wherein said antifiash material comprises a film.

80. A method of claim 75, wherein said substrate includes at least one circuit and at least one connector.

81. A method of claim 75, wherein said first plastic casting and said second plastic casting each comprise an epoxy resin.

82. A method of claim 75, wherein said first material and said second material each comprise a different resin.

83. A method of claim 75, wherein said substrate comprises a reinforced organic polymer resin.

84. A method of claim 75, further comprising:
subjecting said first plastic casting to curing.

85. A method of claim 75, further comprising:
subjecting said second plastic casting to curing.

86. A method of claim 75, wherein said first molding apparatus and said second molding apparatus each comprise transfer molds.

87. A method of claim 75, wherein said second molding apparatus is configured to form a second plastic casting having an inner peripheral portion contiguous with said exposed surface of said first plastic casting and an outer peripheral portion displaced from said exposed surface for attachment of a label covering an interface between said first plastic casting and said second plastic casting.

88. A method of claim 75, comprising:
forming a notch in said second plastic casting to enclose an exposed end of a connecting segment.

89. A method of claim 75, further comprising:
placing a pin in contact with said at least one connecting segment for forming a notch.
90. A method of claim 76, wherein said singulation comprises cutting said at least one connecting segment.
91. A method of claim 76, wherein said singulation comprises cutting said at least one connecting segment with a cutter die.
92. A method of claim 75, wherein said second plastic casting is formed by compressing said frame and said substrate in said second molding apparatus with said first plastic casting compressed for sealingly depressing said substrate to a displaced position relative to said second portion of said substrate.
93. A method of claim 92, wherein said second mold cavity provides for molding of laterally extending wings from a central portion of said peripheral outer edge of said second plastic casting, said wings extending outwardly beyond said peripheral outer edge.
94. A method of claim 92, wherein said displaced position provides encapsulation of said at least one connecting segment within said second plastic casting.
95. A method of claim 76, wherein said singulation comprises cutting said wings and said at least one connecting segment from said second plastic casting along said peripheral outer edge thereof.
96. A method for fabricating a card in a first molding assembly having a first plate and a second plate forming a first mold cavity and a second molding assembly having a first plate and a second plate forming a second mold cavity, said card having a substrate having a circuit side and a back side, said substrate generally separated from a surrounding frame by a peripheral

opening spanned by at least one connecting segment between said substrate and said frame, said substrate having at least one electrical circuit and at least one connector for communicating between said at least one electrical circuit and an external circuit, comprising:

placing said substrate and said frame between said first plate and said second plate of said first molding assembly for engaging at least portions of said first plate and at least portions of said second plate of said first molding assembly with at least portions of said substrate and said frame for injecting a first material into said first mold cavity for molding a first plastic casting onto said circuit side of said substrate and encapsulating said at least one electrical circuit while leaving a peripheral portion of said circuit side free of said first material, said first plastic casting having an exposed surface;

placing said frame, substrate and first plastic casting between said first plate and said second plate of said second molding assembly, at least a portion of said exposed surface of said first plastic casting compressed for sealingly engaging a portion of said back side of said substrate against said first plate of said second molding assembly for injecting a second material into said second mold cavity for molding a second plastic casting surrounding said first plastic casting and enclosing said peripheral portion of circuit side and an edge of said substrate, said second plastic casting having a peripheral outer edge; and singulating said substrate from said frame.

97. The method of claim 1, wherein said second molding assembly leaves said back side of said substrate substantially free of said second material.

98. The method of claim 96, further comprising:
applying antiflash material to said back side of said substrate prior to clamping in said second molding assembly.

99. The method of claim 98, wherein said antiflash material comprises a film.

100. The method of claim 96, wherein said substrate has peripheral edges thereabout, and said at least one connecting segment comprises at least one connecting segment on each of two opposed peripheral edges of said substrate.

101. The method of claim 96, wherein said at least one electrical circuit includes at least one semiconductor component mounted on said circuit side of said substrate.

102. The method of claim 96, wherein said first plastic casting and said second plastic casting each comprise an epoxy resin.

103. The method of claim 96, wherein said first material and said second material each comprise a different resin.

104. The method of claim 96, wherein said substrate comprises a reinforced organic polymer resin.

105. The method of claim 96, further comprising:
subjecting said first plastic casting to a curing step prior to clamping in said second molding assembly.

106. The method of claim 96, further comprising:
subjecting said second plastic casting to a curing step after removal from said second molding assembly.

107. The method of claim 96, wherein said first molding apparatus and said second molding apparatus each comprise transfer molds.

108. The method of claim 96, wherein said at least one connector is mounted on said back side of said substrate.

109. The method of claim 96, wherein said second molding apparatus is configured to form said second plastic casting to have an inner peripheral portion contiguous with said exposed surface of said first plastic casting and an outer peripheral portion displaced from said exposed surface for attachment of a label covering an interface between said first plastic casting and said second plastic casting.

110. The method of claim 96, comprising:
forming a notch in said second plastic casting during said molding thereof configured to enclose an exposed end of a connecting segment following singulation thereof.

111. The method of claim 110, wherein said molding of said second plastic casting is performed by placing a pin in contact with said at least one connecting segment to form the notch.

112. The method of claim 110, wherein said singulation comprises cutting said connecting segment within said notch.

113. The method of claim 112, wherein said singulation further comprises cutting said connecting segment with a cutter die.

114. The method of claim 96, wherein said second plastic casting is formed by compressing said frame and said substrate in said second molding apparatus with said first plastic casting compressed for sealingly depressing said substrate to a displaced position relative to said frame.

115. The method of claim 114, wherein said second mold cavity provides for molding of laterally extending wings from a central portion of said peripheral outer edge of said second plastic casting, said wings extending outwardly beyond said peripheral outer edge.

116. The method of claim 114, wherein said displaced position provides encapsulation of said at least one connecting segment within said second plastic casting.

117. The method of claim 115, wherein said singulation comprises cutting said wings and said at least one connecting segment from said second plastic casting along said peripheral outer edge thereof.

118. The method of claim 117, wherein said wings and said at least one connecting segment are cut from said second plastic casting with a saw.

119. The method of claim 117, wherein said wings and said at least one connecting segment are cut from said second plastic casting by stamping with a cutter die.

120. The method of claim 96, further comprising:
removing extraneous hardened plastic attached to said first plastic casting.

121. The method of claim 96, further comprising:
removing extraneous hardened plastic attached to said second plastic casting.

122. A method for fabricating a plurality of semiconductor cards using a plurality of substrates in strip form having a plurality of spaced-apart substrates, said strip comprising a plurality of peripheral openings defining said substrates and a plurality of connecting segments attaching said substrates to said strip, each substrate of said plurality having at least one circuit thereon and at least one connector, said method comprising:
mounting a card circuit on each substrate of said plurality, each card circuit comprising at least one semiconductor component and apparatus for communication between each said card circuit and an external circuit;

molding first plastic castings to said substrates using a first molding assembly comprising a plurality of mold cavities for forming a first plastic casting over each card circuit while leaving a peripheral portion of each substrate uncovered;

molding second plastic castings to said substrates using a second molding assembly comprising a plurality of mold cavities for forming a second plastic casting encapsulating said peripheral portions of said substrates; and

forming singulated individual semiconductor cards from said strip.

123. The method of claim 122, wherein each of said substrates has first and second planar sides, said card circuit mounted on said first side and including conductors connected to said communication means mounted on said second side.

124. The method of claim 122, wherein said communication means comprises conductive contacts.

125. The method of claim 123, wherein said first plastic casting is configured to be compressed by a first mold plate to force said second side of each substrate against a second mold plate during molding of said second plastic casting.

126. A method of fabricating a card in a first molding assembly and a second molding assembly, said card having a circuit side, a back side, and a substrate generally separated from a surrounding frame by a peripheral opening spanned by at least one connecting segment between said substrate and said frame, said substrate having an electrical circuit and at least one external connector for communicating between said electrical circuit and an external circuit, said method comprising:

placing said substrate and frame between first and second plates of said first molding assembly for engaging at least portions of said substrate and frame with at least portions of said first molding assembly for injecting a first material into a first mold cavity formed by said first and second plates to mold a first plastic casting onto a circuit side of said substrate

and encapsulate said electrical circuit while leaving a peripheral portion of said circuit side uncovered, said first plastic casting having an exposed surface;
placing said frame, substrate and first plastic casting between first and second plates of said second molding assembly, said exposed surface of said first plastic casting compressed for sealingly engaging a back side of said substrate against one of said first plate and said second plate of said second molding assembly for injecting a second material into a second mold cavity of said second molding assembly to mold a second plastic casting surrounding said first plastic casting and enclosing said uncovered peripheral portion and an edge of said substrate, said second plastic casting having a peripheral outer edge; and removing said frame, substrate and first and second plastic castings from said first molding assembly and said second molding assembly when molding is finished in the first molding assembly and the second molding assembly.

127. The method of claim 126, further comprising:
singulating said substrate with attached first and second plastic castings from said frame.

128. The method of claim 126, wherein said molding leaves said back side of said substrate substantially uncovered.

129. The method of claim 126, further comprising the step of applying antflash material to said back side of said substrate prior to clamping in said second molding assembly.

130. The method of claim 129, wherein said antflash material comprises a film.

131. The method of claim 126, wherein said substrate has peripheral edges thereabout, and said at least one connecting segment comprises at least one connecting segment on each of two opposed peripheral edges of said substrate.

132. The method of claim 126, wherein said electrical circuit includes at least one semiconductor component mounted on said circuit side of said substrate.

133. The method of claim 126, wherein said first and second plastic castings comprise epoxy resins.

134. The method of claim 126, wherein said first material and said second material comprise different resins.

135. The method of claim 126, wherein said substrate comprises a reinforced organic polymer resin.

136. The method of claim 126, further comprising subjecting said first plastic casting to a curing step prior to clamping in said second molding assembly.

137. The method of claim 126, further comprising subjecting said second plastic casting to a curing process after removal from said second molding assembly.

138. The method of claim 126, wherein said first molding assembly and said second molding assembly each comprise transfer molds.

139. The method of claim 126, wherein said at least one external connector is mounted on said back side of said substrate.

140. The method of claim 126, wherein said second molding assembly is configured to form said second plastic casting with an inner peripheral portion contiguous with said exposed surface of said first plastic casting and an outer peripheral portion displaced from said exposed surface for attachment of a label covering an interface between said first plastic casting and said second plastic casting.

141. The method of claim 127, further comprising:
forming a notch in said second plastic casting during said molding thereof configured to enclose
an exposed end of a connecting segment following singulation.

142. The method of claim 141, wherein said molding of said second plastic casting is
performed by placing a pin in contact with said connecting segment to form said notch.

143. The method of claim 46, wherein said singulation comprises cutting said
connecting segment within said notch.

144. The method of claim 127, wherein said singulation comprises cutting said at least
one connecting segment with a cutter die.

145. The method of claim 126, wherein said second plastic casting is formed by
compressing said frame, substrate and first plastic casting in said second molding apparatus with
said second mold cavity wherein said first plastic casting is compressed for sealingly depressing
said substrate to a displaced position relative to said frame.

146. The method of claim 145, wherein said mold cavity of said second molding
apparatus provides for molding of laterally extending wings from a central portion of said
peripheral outer edge of said second plastic casting, said wings extending outwardly beyond said
peripheral outer edge.

147. The method of claim 146, wherein said displaced position provides encapsulation
of said at least one connecting segment within said second plastic casting.

148. The method of claim 145, wherein said singulation comprises cutting said wings and said at least one connecting segment from said second plastic casting along said peripheral outer edge thereof.

149. The method of claim 148, wherein said wings and said at least one connecting segment are cut from said second plastic casting with a saw.

150. The method of claim 146, wherein said wings and said at least one connecting segment are cut from said second plastic casting by stamping with a cutter die.

151. The method of claim 126, further comprising removing extraneous hardened plastic attached to said first plastic casting before said molding of said second plastic casting.

152. The method of claim 126 further comprising removing extraneous hardened plastic attached to said second plastic casting following said molding thereof.

153. A method for fabricating a card having a substrate having a circuit side and a back side, said substrate having a first portion thereof having a peripheral edge separated from a second portion of said substrate by a peripheral opening spanned by at least one connecting segment between said first portion of said substrate and said second portion of said substrate in a first molding assembly and a second molding assembly comprising:
placing said substrate between a first plate and a second plate of said first molding assembly, said first plate and said second plate forming a first mold cavity for engaging at least a portion of said substrate by portions of said first plate and portions of said second plate for injecting a first material into said first mold cavity for molding a first plastic casting onto at least a portion of said circuit side of said substrate and leaving a peripheral portion of said circuit side free of said first material, said first plastic casting having an exposed surface; and

placing said second portion of said substrate and said first plastic casting between a first plate and a second plate of said second molding assembly with at least a portion of said back side of said substrate engaging a portion of said first plate of said second molding assembly, said first plate and said second plate of said second molding assembly forming a second mold cavity for injecting a second material into said second mold cavity for molding a second plastic casting surrounding said first plastic casting and enclosing said peripheral edge of said first portion of said substrate, said second plastic casting having a peripheral outer edge.

154. The method of claim 153, further comprising:
removing said substrate from said second molding assembly; and
singulating said substrate.

155. The method of claim 153, wherein said molding of said second plastic casting leaves said back side of said substrate substantially free of said second material.

156. The method of claim 153, further comprising:
applying antifrash material to said back side of said substrate prior to clamping in said second molding assembly.

157. The method of claim 156, wherein said antifrash material comprises a film.

158. The method of claim 153, wherein said substrate includes at least one circuit and at least one connector.

159. The method of claim 153, wherein said first plastic casting and said second plastic casting each comprise an epoxy resin.

160. The method of claim 153, wherein said first material and said second material each comprise a different resin.

161. The method of claim 153, wherein said substrate comprises a reinforced organic polymer resin.

162. The method of claim 153, further comprising:
subjecting said first plastic casting to curing.

163. The method of claim 153, further comprising:
subjecting said second plastic casting to curing.

164. The method of claim 153, wherein said first molding apparatus and said second molding apparatus each comprise transfer molds.

165. The method of claim 153, wherein said second molding apparatus is configured to form a second plastic casting having an inner peripheral portion contiguous with said exposed surface of said first plastic casting and an outer peripheral portion displaced from said exposed surface for attachment of a label covering an interface between said first plastic casting and said second plastic casting.

166. The method of claim 153, comprising:
forming a notch in said second plastic casting to enclose an exposed end of a connecting segment.

167. The method of claim 153, further comprising:
placing a pin in contact with said at least one connecting segment for forming a notch.

168. The method of claim 154, wherein said singulation comprises cutting said at least one connecting segment.

169. The method of claim 154, wherein said singulation comprises cutting said at least one connecting segment with a cutter die.

170. The method of claim 153, wherein said second plastic casting is formed by compressing said substrate in said second molding apparatus with said first plastic casting compressed for sealingly depressing said substrate to a displaced position relative to said second portion of said substrate.

171. The method of claim 170, wherein said second mold cavity provides for molding of laterally extending wings from a central portion of said peripheral outer edge of said second plastic casting, said wings extending outwardly beyond said peripheral outer edge.

172. The method of claim 170, wherein said displaced position provides encapsulation of said at least one connecting segment within said second plastic casting.

173. The method of claim 153, wherein said singulation comprises cutting said wings and said at least one connecting segment from said second plastic casting along said peripheral outer edge thereof.